

### AMENDMENTS TO THE CLAIMS

The following is a marked-up version of the claims with the language that is underlined (“    ”) being added and the language that contains strikethrough (“~~—~~”) being deleted:

1. (Canceled)

2. (Currently amended) An x-ray imaging system comprising:

a gas detector configured to retain a volume of gas, said gas detector having a first detection circuit corresponding to a first ~~region of the gas~~ chamber and a second detection circuit corresponding to a second ~~region of the gas~~ chamber, said first detection circuit being adapted to provide a first signal indicative of an intensity of a first portion of x-rays radiating into the first ~~region of the gas~~ chamber, said second detection circuit being adapted to provide a second signal indicative of an intensity of a second portion of x-rays concurrently radiating into the second ~~region of the gas~~ chamber, the first portion of x-rays being different than the second portion of x-rays, and wherein an x-ray stopping component is arranged between said first and second chambers, the x-ray stopping component operative to absorb off-axis photons. ~~said gas detector includes a substrate; and a chamber supported by said substrate, wherein the volume of gas is retained within said chamber.~~

3 - 4. (Canceled)

5. (Currently amended) The x-ray imaging system of claim 2, further comprising:

a first gas reservoir selectively, pneumatically communicating with said first chamber;  
and

a second gas reservoir selectively, pneumatically communicating with said first chamber  
such that gas from either said first gas reservoir or said second gas reservoir can be selectively provided to said first chamber.

6 - 12. (Canceled)

13. (Previously Presented) The x-ray imaging system of claim 2, further comprising:  
means for changing a pressure of the volume of gas.

14. (Previously Presented) The x-ray imaging system of claim 2, further comprising:  
means for changing the gas from one type of gas to another type of gas.

15. (Currently amended) A method for imaging with the use of x-rays, said method comprising:

providing a first chamber, a second chamber, and an x-ray stopping component between the first chamber and the second chamber; volume of gas;

~~defining a first region of the gas and a second region of the gas, the first region of the gas being different than the second region of the gas;~~

generating a first signal indicative of an intensity of a first portion of x-rays radiating into the first ~~region of the gas~~ chamber, the first signal corresponding to at least a first pixel; and

generating a second signal indicative of an intensity of a second portion of x-rays concurrently radiating into the second ~~region of the gas~~ chamber, the second signal corresponding to at least a second pixel, wherein the first portion of x-rays is different than the second portion of x-rays.

16. (Original) The method of claim 15, further comprising:  
rendering the first pixel based on the first signal; and  
rendering the second pixel based on the second signal.

17. (Canceled)

18. (Currently amended) The method of claim 15, ~~wherein the volume of gas is retained within a chamber; and~~ further comprising:

changing a pressure of ~~the~~ a volume of gas within the first chamber.

19. (Currently amended) The method of claim 15, further comprising:  
providing an object to be imaged, the object being arranged at least partially between a source of x-rays and ~~the volume of gas~~ at least one of the first and second chambers;  
generating additional signals indicative of the intensity of x-rays radiating into the first and second chambers ~~regions of the gas~~; and  
generating sequential images corresponding to the object based on the additional signals.
20. (Original) The method of claim 19, further comprising:  
moving the object relative to ~~the volume of gas~~ at least one of the first and second chambers while the object is being radiated.
- 21 - 32. (Canceled)
33. (New) A pixelated gas detector comprising:  
a first chamber configured to retain a first volume of gas;  
a first detection circuit adapted to provide a first signal indicative of an intensity of a first portion of x-rays radiating into the first chamber;  
a second chamber configured to retain a second volume of gas;  
a second detection circuit adapted to provide a second signal indicative of an intensity of a second portion of x-rays concurrently radiating into the second chamber; and  
an x-ray stopping component arranged between the first and second chambers, the x-ray stopping component configured to absorb off-axis photons.
34. (New) The pixelated gas detector of claim 33, wherein the first and second chambers are configured to communicate with each other pneumatically.
35. (New) The pixelated gas detector of claim 33, further comprising:  
a first and a second gas reservoir pneumatically communicating with the first chamber such that gas from either the first or the second gas reservoir can be selectively provided to the first chamber.

36. (New) The pixelated gas detector of claim 33, further comprising:  
a pressure regulator configured to set a first pressure of gas in the first chamber.
37. (New) The pixelated gas detector of claim 33, wherein the x-ray stopping component comprises lead.